



**SERIAL MULTIPLE MEDIATION OF SELF-TRANSCENDENCE
AND PSYCHOLOGICAL RESILIENCE IN THE RELATIONSHIP
BETWEEN FEAR OF COVID-19 AND SUBJECTIVE
HAPPINESS IN UNIVERSITY STUDENTS**

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Abstract:

During COVID-19 period, positive psychology and positive aspects of human nature become important. The aim of this study is to examine the mediating role of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness in university students during the COVID-19 period. The Fear of COVID-19 Scale, Brief Resilience Scale, Self-transcendence Scale and Subjective Happiness Scale were completed online by 437 university students. According to the results of correlation analysis, positive significant correlations were found between psychological resilience, self-transcendence and subjective happiness and fear of COVID-19 was negatively related to these variables. The mediating roles were examined by using the bootstrap method with Hayes' PROCESS template. As a result of this analysis, the serial multiple mediation of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness was statistically significant. Obtained findings were discussed in line with the literature and suggestions were made to the researchers.

Keywords: positive psychology, psychological resilience, self-transcendence, subjective happiness, fear of COVID-19

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1. Introduction

A new type of coronavirus emerged in the Wuhan city of China about two years ago and called COVID-19 by World Health Organization. COVID-19, which turned into a pandemic in a short time, is distinguished from other types of coronaviruses with its rate of spread and virulence (Zhao et al., 2020). Individuals had to go through new experiences they haven't before due to the epidemic (Duman, 2020). Governments took a number of precautions such as wearing masks, social isolation, curfews and quarantine in order to reduce the transmission rate of the virus in this process (Xiao & Torok, 2020). Because of these consequences, people all around the world have been greatly affected by the process and have had to make sudden changes in their lifestyles. It is inevitable for such sudden and new changes in order to have an impact on human psychology (Chen et al., 2020; Xiao, 2020). When the literature is examined, it can be seen that Covid-19 increases the psychological symptoms levels of individuals, especially depression and anxiety (Hyland et al., 2020; Mazza et al., 2020; Rehman et al., 2020; Salari et al., 2020).

As a result of the study conducted by Bauerle et al. (2020) on a German sample, a significant increase was found in the symptoms of generalized anxiety (44.9%), depression (14.3%), psychological symptoms (65,2%) and COVID-19 related fear (59%). As a result of the meta-analysis Deng et al. (2020) included 31 studies, it was found that the prevalence of depression was 45%, anxiety was 47% and the prevalence of sleep disorders was 34%. It has been stated that these results have increased significantly compared to symptom levels before the pandemic. As a result of the study conducted in China on approximately 45 thousand university students, the prevalence of anxiety was found as 7.7% and the prevalence of depression was 12.2% (Wang et al., 2020). In the light of all this information, it can be seen that individuals are psychologically affected in a negative direction during the COVID-19 process. At this point, the important question is: Why are individuals affected by the COVID-19 process at different levels? Why are some individuals psychologically affected by this process too much while some are not? There may be too many different answers to this, however, it can be thought that the high levels of psychological resilience of the individuals may be effective at this point.

Psychological resilience, which was derived from the root of the Latin word of "resiliens" is used to mean being flexible, being able to return to essence easily and in a short time. When the literature is examined, it can be seen that experts have made very different definitions regarding the concept of psychological resilience. According to Windle (2011), psychological resilience is a phenomenon that occurs as a result of the interaction of healthy adjustment-related protective factors associated with existing risk factors. According to Masten (1994), psychological resilience is a concept that includes people in high-risk groups to achieve better results than expected negative results, adapt by coping with stressful events and recover quickly in the face of traumatic experiences. In another definition, psychological resilience is defined as the adaptation and the ability to cope in the face of negative experiences (Block & Kremen, 1996).

Although different definitions have been made of psychological resilience, it can be seen that there are some common points that should be paid attention to. When defining psychological resilience, it is (a) the presence of a serious threat or risk (trauma), (b) the realization of a successful adaptation process in the face of risk or a traumatic situation (Luthar et al., 2000; Masten & Coatsworth, 1998). Based on these points, studies conducted on psychological resilience have focused on the adaptation process in the face of risk and studies focused on different risk situations or negative experiences such as war, trauma and deadly diseases (Hubbard et al., 1995; Rabkin et al., 1993). Considering that COVID-19 causes negative experiences for individuals and the risk factors it brings along, the concept of psychological resilience becomes important during this pandemic process. When the literature is reviewed, it can be seen that a large number of studies have been conducted on psychological resilience during the COVID-19 process (Dvorsky et al., 2020; Farewell et al., 2020; Kimhi et al., 2020; Pearman et al., 2020; PeConga et al., 2020; Walsh, 2020). A common point of these studies is that psychological resilience is a protective factor during the COVID-19 process and that it is associated with negative psychological effects caused by the process. In positive psychology, besides psychological resilience, there are also other concepts which protect the individual from negative psychological effects caused by risk factors. One of these concepts is subjective happiness.

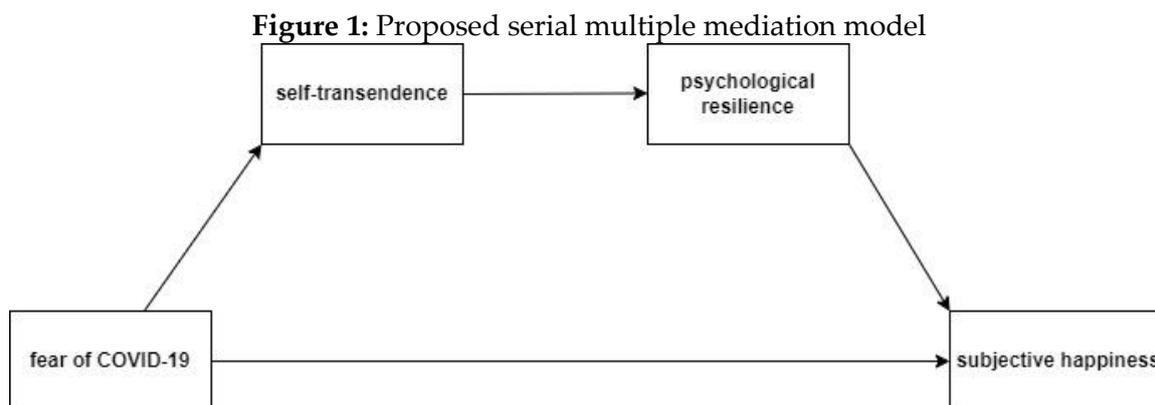
COVID-19 process has the potential to affect subjective happiness, which is one of the indicators of mental health (Satici et al., 2020). According to Gable and Haidt (2005), while positive psychology deals with topics such as satisfaction, life satisfaction and happiness, it does not deny the troubles and negative aspects of life. While acknowledging the negative aspects, the aim of positive psychology is to present the ways of improvement in positive emotions and the ultimate goal of happiness. Happiness, which is always considered a dream to reach and which has been the subject of studies since ancient times, is a concept that varies from person to person. According to Lyubomirsky and Lepper (1999), subjective happiness refers to the measure that individuals consider themselves as happy. People with high living standards may consider themselves unhappy and those who have uncomfortable living conditions may perceive themselves as happy (Lyubomirsky & Lepper, 1999). Although the negative experiences caused by COVID-19 process are similar for all individuals, the influence level of these experiences is subjective. Therefore, despite the pandemic process, the happiness levels of the individuals can be different. In the literature, a bunch of studies have been carried out on the subjective happiness levels of individuals during the COVID-19 process (Khodabakhsh et al., 2020; Satici et al., 2020; Zhao et al., 2020). In a study conducted in Spain, the psychological variables of people during the lockdown era of Covid-19 were examined. Results indicated that the people who have higher subjective happiness levels adapt better to lockdown with more positive attitudes and behaviors (Morales-Vives et al., 2020).

Another important point that causes the difference between the behaviors of individuals during the COVID-19 process values. According to Wolf et al. (2020), considering that values transcend certain situations, have a consistent structure across cultures and are associated with a series of behaviors, they can be considered to play a prevalent role in shaping the reactions given to the COVID-19 pandemic. It can be expected for individuals who support their values with a social focus, self-transcendence (for example, responsibility) and protection (for example, family safety) to adapt better to the COVID-19 process. It can be said that individuals with higher self-transcendence levels have a higher ability to adapt to worry and anxiety (Wolf et al., 2020). In the light of this information, self-transcendence is vital during the COVID-19 process. During the pandemic, a considerable number of people experience fear and anxiety for beloved ones and for themselves. Self-transcendence is the ability to dedicate oneself to others, to his/her work, to a case or to activity by no longer being engaged with himself/herself (Sarıçam, 2015). According to another definition, self-transcendence is the capacity to reach and explore beyond oneself or to make sense of experiences by expanding attitude and perspective (Coward, 1996). Based on all this information, self-transcendence may be used as a coping mechanism during COVID-19 process. Indeed, when the literature is examined, there are some studies conducted on self-transcendence during COVID-19 process (Politi et al., 2020; Walsh, 2020; Wolf et al., 2020).

In the COVID-19 process, the concepts related to positive psychology are discussed by the researchers and it's concluded that the concepts of positive psychology are the protective factors against the negative psychological effects. The interrelated concepts of psychological resilience, subjective happiness and self-transcendence were held in this study besides fear of COVID-19. When the literature is examined, some studies found a positive relationship between psychological resilience and subjective happiness (Eldeleklioğlu & Yıldız, 2020; Satıcı, 2016). Similarly, a couple of studies determined that there are positive relationships between happiness and self-transcendence (Lalehkani et al., 2020; Reed, 1991). The findings of some studies indicated that there are positive relationships between psychological resilience and self-transcendence (Bajjani-Gebara et al., 2019; Nygren et al., 2005). In another study conducted on adolescents in China, the positive effects of self-transcendence on mental health were examined and a negative relationship was found between the level of self-transcendence and loneliness and depression (Liu et al., 2021). Also, the mediator roles of some concepts held in this study were also examined in studies conducted during the pandemic period. In a study, psychological resilience had a direct effect on subjective happiness, and the fear of Covid-19 has a mediating role in this effect (Satıcı et al., 2020). In another study conducted during the pandemic period, psychological resilience had a mediating effect on the relationship between subjective happiness and social media use (Khodabakhsh & Ahmadi, 2020).

To sum up, sudden and radical changes during the COVID-19 pandemic have a negative effect on individuals. People experience various psychological problems such

as depression, anxiety and fear during this process. What matters at this point is the reactions that individuals will show in the face of these negations? Positive psychology depends on the ability of individuals to remain positive even in negative experiences. It is thought that examining psychological resilience, subjective happiness and self-transcendence, which are some of the important concepts examined by positive psychology, is important during this pandemic process. When the literature is reviewed, although there are some studies examining these concepts, it can be seen that there is no study which deals with all these concepts together. The aim of this study is to examine the serial multiple mediation of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness. Another goal of this study is to explain the differences between reactions shown by individuals during the pandemic and to find out the factors that help them to overcome this process with fewer negative effects. Finally, it is thought that the present study is valuable in terms of explaining the importance of positive psychology concepts during the pandemic process and that it will contribute significantly to positive psychology literature. The hypothesized model is shown in Figure 1.



2. Method

2.1 The process and the participants

This study is a research conducted between January 4 and 30, 2021 by using an online survey created by Google forms. Before starting the study, required permissions were taken from Bülent Ecevit University Ethics Committee. The link of the form including the scales was shared with online communities and groups including university students. On the page including the survey link, information was given to the participants about the aim and content of the study and the individuals carrying out the study before answering the scale items. In addition, the individuals were informed that participation in the study was voluntary, they could leave the study any time they wanted and all the data would be kept confidential.

A total of 437 individuals, 344 females and 93 males, participated in the study. The ages of the participants were found to range between 18 and 44 and the mean age was found as 20.92 ($SD = 2.72$). Details about demographic information are given in Table 1.

Table 1: Information on Demographic Variables

| | n | % |
|----------------------|-----|------|
| Gender | | |
| Male | 93 | 21.3 |
| Female | 344 | 78.7 |
| Year of study | | |
| 1 st year | 95 | 21.7 |
| 2 nd year | 136 | 31.1 |
| 3 rd year | 93 | 21.3 |
| 4 th year | 89 | 20.4 |
| Postgraduate | 24 | 5.5 |

2.2 Data Collection Instruments

The Fear of COVID-19 Scale, Brief Resilience Scale, Self-Transcendence Scale, Subjective Happiness Scale and Personal Information Form were used in the present study. The information about the scales is detailed below.

2.2.1 The Fear of COVID-19 Scale

The scale development was carried out by Ahorsu et al. (2020) to measure the level of fear based on COVID-19. The 5-Likert type scale insists on 7 items collected in a single factor. Higher scores show a higher level of fear of COVID-19. The scale adaptation process to Turkish culture was held by Bakioğlu et al. (2020). Cronbach Alpha internal consistency reliability coefficient was found as .88.

2.2.2 The Brief Resilience Scale

The scale was developed by Smith et al. (2008) to measure the psychological resilience of individuals and it was adapted to Turkish culture by Doğan (2015). The 5-Likert type scale includes a total of 6 items. Higher scores indicate a higher level of psychological resilience. Factor loads of scale items range between .63 and .79. Cronbach's alpha internal consistency coefficient of the scale was found as .83.

2.2.3 Self-Transcendence Scale

Self-transcendence scale developed by Reed (1991) was adapted into Turkish by Sarıçam (2015). This scale is a 4-Likert type scale the 15 items were collected in a single factor. In the scale validation study, a positive correlation was found between self-transcendence and meaning of life, while negative correlations were found between self-transcendence and depression, anxiety and stress. Additionally, corrected item-total correlations ranged between .34 and .57. Last, Cronbach Alpha internal consistency reliability coefficient was found as .87, while the test-retest correlation coefficient was found as .80.

2.2.4 Subjective Happiness Scale

Subjective Happiness Scale (SHS) is a 7-Likert type, single-factor scale developed by Lyubomirsky and Lepper (1999). Higher scores indicate a higher level of subjective happiness. SHS was adapted into Turkish culture by Doğan and Totan (2013). Factor loads of the scale range between .30 and .78, and Cronbach's alpha internal consistency coefficient of the scale was .70 for the community sample and .65 for university students.

2.2.5 Personal information form

This form was used to obtain the demographic information of the participants. For this reason, the participants were asked questions such as gender, age, and year of study.

2.3 Data analysis

In the analysis part, it was first examined whether the data showed normal distribution. For this reason, Skewness and Kurtosis values were examined and they were found to range between -2 and +2 (George & Mallery, 2010). Next, the correlations between means and standard deviation values of the variables and the correlations between the variables were examined. In addition, the direct and indirect effects were examined by using bias-corrected bootstrapped confidence intervals using 5000 repetitions and 95% confidence interval. By using the sampling with replacements strategy, a large sample is created from the original data by bootstrapping process (5,000 in the present study). Bootstrapping creates a confidence interval (95% in the present study) around the indirect effect and in order to assume a significant indirect effect, a zero should not be contained in the interval (Preacher & Hayes, 2008). In the present study, confidence intervals did not include zero effect. The analyses were made with SPSS 23 software package.

3. Results

First, correlation analysis was performed to find out the relationship between fear of Covid-19, self-transcendence, psychological resilience and subjective happiness. These relationships and means, standard deviations, skewness and kurtosis information of the variables are displayed in Table 2.

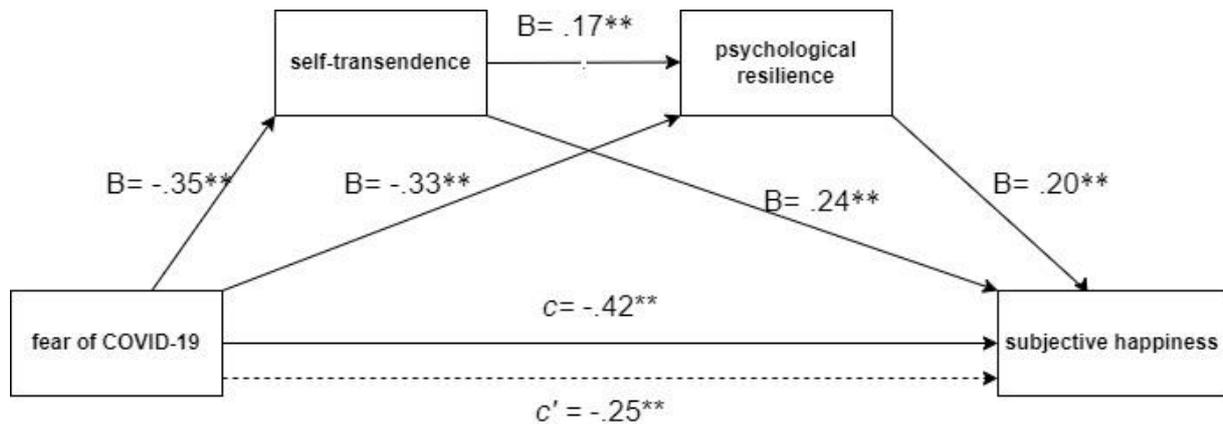
As can be seen in Table 2, the students were found to have moderate levels of mean self-transcendence ($X: 45.03$), psychological resilience ($X: 18.40$) and subjective happiness ($X: 16.12$) and fear of COVID-19 ($X: 17.62$). The means of these variables were found to be at moderate levels. According to correlation analysis results, self-transcendence was found to be positively and significantly correlated with psychological resilience ($r = .34$; $p < .01$) and subjective happiness ($r = .41$; $p < .01$). On the other hand, fear of COVID-19 was negatively related to self-transcendence ($r = -.35$; $p < .01$), psychological resilience ($r = -.48$; $p < .01$) and subjective happiness ($r = -.49$; $p < .01$). Mediation analysis was conducted after this step.

Table 2: Information About the Variables and The Relationship between Them

| Variables | 1 | 2 | 3 | 4 |
|-----------------------------|--------|--------|--------|-------|
| 1. Self-transcendence | — | | | |
| 2. Psychological resilience | .34** | — | | |
| 3. Subjective happiness | .45** | .41** | — | |
| 4. Fear of COVID-19 | -.35** | -.48** | -.49** | — |
| Mean | 45.03 | 18.40 | 16.12 | 17.62 |
| SD | 5.34 | 4.67 | 3.22 | 5.72 |
| Skewness | -.25 | -.38 | .01 | .58 |
| Kurtosis | .63 | .01 | .20 | .26 |
| Cronbach's α | .78 | .87 | .79 | .87 |

**<p.001

Figure 2: The serial multiple mediation of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness



**<p.001

In order to test the serial multiple mediation of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness, PROCESS macro in SPSS with 5000 bootstrapped samples was used (Hayes, 2012). Findings were presented in Figure 2.

As a result of the analysis, it was found that the total effect of fear of COVID-19 ($c = -.42$, $SE = .03$, $t = -11.82$, $p < .001$) on subjective happiness was significant (Step 1). Additionally, fear of COVID-19 had a negative direct effect on self-transcendence ($B = -.35$, $SE = .04$, $t = -7.90$, $p < .001$) and psychological resilience ($B = -.33$, $SE = .04$, $t = -9.05$, $p < .001$). Self-transcendence, as a first mediator, had a total significant direct effect ($B = .17$, $SE = .03$, $t = 4.84$, $p < .001$) on the second mediator of psychological resilience (Step 2). As the mediators, the direct effects of self-transcendence ($B = .24$, $SE = .03$, $t = 6.91$, $p < .001$) and psychological resilience ($B = .20$, $SE = .04$, $t = 4.37$, $p < .001$) on subjective happiness were also significant (Step 3). In the final step (Step 4), fear of COVID-19 and the mediators were simultaneously entered into the model and in this case, the direct effect of fear of COVID-19 ($c = -.25$, $SE = .04$, $t = -6.68$, $p < .001$) on subjective happiness

was significant. According to these results, the serial multiple mediation was proved. The comparisons of indirect effects and specific effects of fear of COVID-19 on subjective happiness levels through self-transcendence and psychological resilience are given in Table 3.

Table 3: Comparison of the Indirect Effects of fear of COVID-19 on subjective happiness through self-transcendence and psychological resilience

| Effects | Coefficients | | Bootstrapping 95% | BCa Confidence Interval |
|------------------------------------|--------------|---------|----------------------|----------------------------|
| | Estimate | Boot SE | BootLL CI | BootUL CI |
| Total indirect effect of FoC on SH | -.1954 | .0291 | -.2541 | -.1373 |
| Ind1: FoC → STR → SH | -.1029 | .0212 | -.1460 | -.0619 |
| Ind2: FoC → RES → SH | -.0778 | .0207 | -.1214 | -.0403 |
| Ind3: FoC → STR → RES → SH | -.0147 | .0052 | -.0261 | -.0060 |
| Contrasts | | | | |
| Model 1 versus Model 2 | -.0251 | .0327 | -.0878 | .0410 |
| Model 1 versus Model 3 | -.0882 | .0207 | -.1299 | -.0492 |
| Model 2 versus Model 3 | -.0631 | .0194 | -.1047 | -.0297 |

Note: N = 437. Number of bootstrap samples for bias corrected bootstrap confidence intervals: 5,000. Level of confidence for all confidence intervals: 95%. SE = Standard errors; LL = Lower level; UL = Upper level; FoC = Fear of COVID-19; STR = Self-transcendence; SH = Subjective happiness; RES = Psychological resilience.

As seen in Table 3, the total indirect effect of fear of COVID-19 on subjective happiness levels through self-transcendence and psychological resilience was statistically significant (Estimate = -.1954, $p < .001$, %95 CI [-.2541, -.1373]). In this model, as the all variables are taken into account, single mediation of self-transcendence (Estimate = -.1029; 95 % CI [-.1460, -.0619]), single mediation of psychological resilience (Estimate = -.0778; 95% CI [-.1214, -.0403]) and serial-multiple mediation of self-transcendence and psychological resilience (Estimate = -.0147; 95% CI [-.0261, -.0060]) were found statistically significant.

In the present study, to decide whether specific indirect effects of mediators were stronger than others, contrasting findings were determined, and three pairs of contrasting findings were obtained. As shown in Table 3, the three statistically significant contrasts were not inside the zero-point estimate based on the 95% BC CI. Based upon the contrasting pairs of specific direct effects, the variable of self-transcendence was observed to have stronger mediation than the serial-multiple mediation of self-transcendence and psychological resilience. In another comparison, psychological resilience was observed to have a stronger mediation than the serial-multiple mediation of self-transcendence and psychological resilience.

4. Discussion

Correlation analysis of the present study showed positive significant correlations between psychological resilience, self-transcendence and subjective happiness and negative significant correlations between fear of COVID-19 and the abovementioned variables. Moreover, the mediator roles of self-transcendence and psychological resilience in the relationship between fear of COVID-19 and subjective happiness were approved. There are some studies in the literature confirming the relationship between psychological resilience and happiness. According to Clark and Hartman (1999), when psychological resilience was examined with cognitive assessments, it has been assumed that it will also increase the level of happiness since it has a protective effect against negative emotions. In a study with a sample of 477 high school students, Toprak (2004) showed that psychological resilience significantly predicted happiness. Studies have shown that individuals with psychological resilience protect their physical and psychological health even in their distressed times and improve their psychological well-being levels (Connor & Davidson, 2003). In another study conducted during the pandemic period, it was found that psychological resilience has a direct effect on subjective happiness (Satici et al., 2020). As can be understood from these results, psychological resilience has components that may cause individuals to be happy even if they go through difficult and troubled times.

There are also studies examining the correlation between self-transcendence and happiness. Self-transcendence was positively associated with well-being and mental health (Coward, 2003). Some researchers also stated that self-transcendence levels are an important source in contributing to the well-being of human beings (Reed, 1991). In a recently conducted study, a positive and significant correlation was found between self-transcendence and happiness (Lalehkani et al., 2020). In another study conducted on Chinese adolescents during the Covid process, the positive effects of self-transcendence on mental health were examined and a negative relationship was found between the level of self-transcendence and loneliness and depression (Liu et al., 2021). These results are in parallel with our results. Individuals with self-transcendence may have a higher possibility to be happy with their spiritual feelings and sense of meaning in life.

There are also studies on the relationship between self-transcendence and psychological resilience. In a study, psychological resilience was found to be moderately correlated with self-transcendence in both women and men (Nygren et al., 2005). Also, it was found that self-transcendence in parent caregivers partially mediated the relationships between psychological resilience and depression, psychological resilience and anxiety, and psychological resilience and positive well-being (Bajjani-Gebara et al., 2019). According to the results of these studies, self-transcendence and psychological resilience are related concepts which tend to increase in the same direction. From a universal perspective, it is thought that self-transcendence affects individuals positively in terms of spirituality and psychological resilience helps individuals not to give up in

difficult and troublesome conditions of life. Therefore, it is predicted that individuals with such qualities may hold on better to life and can be happy in their lives within a meaning, no matter what happens.

Finally, fear of COVID-19 became a reality in our lives and numerous studies were conducted about FoC within a couple of years. In most of the studies, FoC was negatively related to self-transcendence (Politi et al., 2020; Walsh, 2020; Wolf et al., 2020), psychological resilience (Dvorsky et al., 2020; Farewell et al., 2020; Kimhi et al., 2020; Pearman et al., 2020; PeConga et al., 2020; Walsh, 2020) and happiness (Khodabakhsh et al., 2020; Morales-Vives et al., 2020; Satici et al., 2020; Zhao et al., 2020). These results indicate that these concepts are highly correlated and confirm the findings of the present study. As there is no study conducted with these concepts altogether, it is considered that the present study contributed to the literature.

This study has some limitations. The study was conducted with university students between the ages of 18 and 44 with a convenience sampling method. Therefore, the results cannot be generalized to individuals younger than 18 years of age and older than 44 years of age. It is recommended to repeat the study for individuals who are not within this age range, who are not university students, who are unemployed or who are working in a job. Study data may be biased since they were obtained as self-report. In addition, it should also be considered that there may also be individuals who do not have the access to the internet or who have problems with this. Since the present study has a correlational structure, cause and effect inference cannot be made between the variables. Since this study deals with the relevant variables in the Covid-19 period, it can be repeated with the same variables after the pandemic ends and the difference between can be examined as a pre-test and post-test experimental study. In addition, the mediating effect of variables such as the meaning of life, self-compassion and wisdom in the relationship between self-transcendence and subjective well-being may be examined. Since the concept of self-transcendence is a recently studied concept in Turkey, it can be studied in different groups such as religious, liberal or atheist groups, etc. Since the psychological resilience and happiness levels of individuals may decrease during the pandemic period, they can be supported with various intervention programs. Last, the impact of mass media's way of broadcasting the news about Covid-19 on psychological levels of the people (fear, anxiety, burnout etc.) can be examined.

As a conclusion, when the present research and other studies in the literature are evaluated, it's assumed that psychological resilience, self-transcendence and happiness are protective factors against the increasing psychological symptom levels of individuals in the covid process. It is thought that studies conducted by understanding and the awareness of these variables are important not only in the pandemic period but in all one's puff and may contribute to humanity. We may use these concepts as coping tools and relieve the detrimental effects within or after this process.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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